REMARKS

The failure to include Applicant's curriculum vita with the response to the previous Office Action is regretted. A copy is now enclosed.

The present invention is directed to the combination of a gas pressure controller and a mold dump valve that utilizes the gas controller to regulate the rate of the exhaust of gases from a mold while at the same time preventing the back flow of contaminated gases to the controller. It is important in injection molding that the venting be regulated as opposed to rapidly exhausting the mold as is permissible in blow molding operations.

Claims Rejected Under 35 U.S.C. 112

Claims 10 – 22, the only claims remaining in the application, have been rejected under 35 U.S.C. 112 as directed to subject matter not supported by the written disclosure. This rejection is respectfully traversed. The valve disclosed in the specification includes a piston with a dome-to-seat ratio of near 1 to 1. The piston is biased between an open and closed position solely by the pressure differential across the piston. It would be clear to one having ordinary skill in the art that such a construction would produce a movement between the fully open and fully closed position that is proportional to the pressure differential across the piston. Intermediate positions of the piston are inherent in the construction shown.

Claims 16 and 20 have been amended to provide antecedent basis for the check valve recited in these claims.

Claims Rejected Under 35 U.S.C. 102(b)

Claims 10, 13, 16 – 17 and claims 20-21 were rejected by the Examiner under 35 U.S.C. 102(b) as anticipated by the patent to Reilly. To anticipate the reference must include a disclosure which includes each of the important limitations of the rejected claims. Each of the rejected claims is directed to a combination which has been amended to include the gas controller capable of delivering gas to mold at varying pressures. Reilly does not disclose a system which includes a gas controller capable of controlling pressure delivered to the dump valve. The rejection of these claims under 35 U.S.C. 102b is improper and should be withdrawn. The "conventional control valve" described in column 5, lines 10-23 of Reilly is a four way valve capable only of opening and closing pressurized flow to the blow head assembly. There is no control of the pressure delivered to the mold as is necessary in the injection mold process.

Claims Rejected Under 35 U.S.C. 103

Claims 10 – 20 have been rejected as unpatentable under 35 U.S.C. 103 over Reilly alone or Reilly in combination with Quartana.

Reilly discloses a system for rapidly exhausting the mold cavity in a blow molding machine. Reilly is not interested in nor is the system shown capable of controlling the pressure of gases in the cavity during the period in which the cavity is being filled with gas and in which the cavity is being exhausted as is necessary in the injection molding process. Applicant achieves this control by providing a gas controller capable of delivering gases through the valve to the mold cavity at a regulated pressure

and a dump valve construction which opens the mold cavity during exhaustion of the cavity to a vent upstream of the gas controller and at a controlled rate to maintain the desired pressure in the cavity during the mold exhausting step in the process.

The Examiner has taken the position that despite the clear lack of teaching in Reilly that the dome-to-seat ratio in Reilly is nearly 1:1 as set forth in the rejected claims.

Reilly's purpose is to provide a rapidly exhausting blow down valve. It performs this function by having the majority of one side of the valve seat open through passage 32 to the atmosphere while only a small portion of the outer diameter of the same side is in registry with the mold cavity control gas pressure. This places a significant force that biases the valve in the closed position. In order to vent the mold cavity, the valve would have to almost completely depressurize the inlet side at which point the large opening of the venting side would open to the mold cavity and "rapidly exhaust" the part. This valve would not be able to effectively control the depressurization of the mold cavity and would not be able to allow excess gas pressure in the mold cavity to vent, as the inlet pressure is held constant. The Examiner argues that the valves would become similar if the "annular area at 54" was increased until the dome-to-seat ration becomes closed to 1:1. He also points out that the cross sectional area increases with the square of the radius.

The Examiner is correct in saying that the annular area increases with the square of the radius but unfortunately the venting port of the Reilly valve is in the center of the area of the control piston. For this reason the argument used that as the radius increases by square is a better argument against the valve being able to reach a 1:1 dome-to-seat

ratio. The annular area of the valve that is in registry with the mold in Reilly is actively the dome side area minus the vent port area.

In any event, whether the Reilly valve could or could not be modified to provide a nearly 1 to 1 dome-to-seat ratio is not important. What is important is that there is no teaching in Reilly to do so nor is there any teaching that to do so provides a valve which permits the venting pressure to be controlled.

The Examiner has clearly utilized the teachings of the present application to modify Reilly to construct a valve which operates contrary to what Reilly is trying to achieve. Such hindsight reconstruction is not permissible and the Examiner's rejection under 35 U.S.C. 102 and 35 U.S.C. 103 should be withdrawn.

Respectfully submitted,

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